

Varnish Difficulties

TRADE **VALENTINES** MARK.

9486

Varnish Difficulties

TRADE **VALENTINES** MARK.
ARNISHES

VALENTINE & COMPANY

NEW YORK . . . 456 Fourth Ave.

CHICAGO . . . 343 So. Dearborn St.

BOSTON . . . 49 Purchase St.

TORONTO . . . 311 King St., East

W. P. FULLER & CO., San Francisco, California
Pacific Coast Agents

As a Foreword it might be well to point out that there are many aliases for the same trouble, and for the purposes of this series of talks, we have, therefore, been able to reduce the number of typical troubles to twelve.

The twelve difficulties to be covered in these articles may be divided into three general classes:

- (1) Those due to poor materials.
- (2) Those due to unskilled or careless workmanship.
- (3) Those due to unforeseen or unpreventable conditions of weather or atmosphere.

NUMBER ONE

Going "Sandy," "Seedy," or
"Specky," Including Remarks
upon "Chilling"

Definition — These terms are applied when the varnished surface appears as if fine sand or seed had been sprinkled over it. The trouble usually appears first in the process of drying and from a half hour to an hour after the varnish has been applied.

Causes—Looking first to the varnish itself, we find that a newly made varnish which has not had sufficient time to ripen, is liable to make work "seedy," but an experienced workman will generally be able to detect, by its working, that it is not in condition to use.

Some old painters claim that they improve the flowing and working of a varnish by opening the can, and allowing it to stand opened an hour or two before use.

"Chilling" of varnish, liable to occur during cold weather, is one of the common causes of a sandy surface.

In cold weather, after a job has been varnished and after it has become set, there will sometimes appear a multitude of specks. As the varnish dries these specks will become even more apparent.

This is caused by the oil in the varnish, in connection with the dryers with which it is made, becoming chilled.

"Chilling" may readily be avoided by keeping the varnish room at a proper temperature, and by further seeing to it that the varnish is stored in a room which is heated.

A shelf near the ceiling in the varnish room, away from windows and outside walls,

is the proper place to keep all the cans of varnish in use, or soon to be used.

When actually opened for use, varnish should always be of the same temperature as the room in which it is to be applied, and as the job on which it is to go.

“Chilling” and the resulting “sandiness” may also be caused by exposure of the varnish to extreme cold during transportation or by storage in a damp or exposed freight depot.

This will affect its working and flowing, or, in more severe cases, the particles of dryer may be crystallized, filling the varnish with specks, often mistaken by painters to be particles of gum.

A varnish that is “specky” due to “chilling,” may often be made right by being heated to about 110 degrees F., and then being kept in a warm place.

Varnish does not become seedy or sandy by reason of age, but it sometimes happens that a varnish left standing for a very long time will deposit more or less settlings.

For this reason, a careful painter will never use the last one-eighth of a can of *finishing* varnish, but set this aside for use on gears and other less particular work.

Specks are also liable when a varnish is allowed to skin over; and although varnishes vary on this point, it is always a good plan to keep the patented Valentine stopper constantly in the can; if this skin is broken and mixed up with the varnish, the job is almost certain to be sandy or seedy.

Three other common causes of specky work are (1) dirt on the job, such as pumice powder, etc; (2) dust in the air, particularly likely to be the case in loosely-built shops without proper equipment; (3) specks or “lice” in the varnish-brush, due to a variety of causes, which every experienced painter ought to understand.

NUMBER TWO

“Sweating”

Definition—“Sweating” is the technical term applied to a greasy gloss which often makes its appearance upon a varnished surface, after it has been rubbed and allowed to stand for some time.

Causes—“Sweating” is usually evidence that the varnish is not thoroughly hard. In the hands of an inexperienced workman it may lead to serious results if varnished over, causing “pitting,” “icicling,” or a variety of other troubles.

It must be remembered that varnish is always liable to “sweat” if placed over color or varnish that is not thoroughly dry.

Even when applied over a properly prepared surface, a varnish will often “sweat” if not given sufficient time to dry.

As the proportion of oil in a varnish is increased, so is the liability of the varnish to “sweat,” and the most durable varnishes are therefore most likely to give trouble in this respect.

As an illustration, it has been pointed out that the finest finishing varnish, if rubbed a week or two after application, would very likely “sweat” badly.

How shall we avoid the serious dangers of “sweating”?

As a first precaution in case of a job liable to “sweat,” allow it to stand after being rubbed four or five hours if in Summer, or overnight if in Winter. The “sweat” will probably make its appearance in this time.

If “sweating” does occur allow the job to stand just as long as possible before var-

nishing. Rub with fine pumice or an old pumice rag, rinse carefully and finish.

If this procedure is not followed or if the job is finished too soon, the finishing coat is very apt to be specky or full of fine brush-marks.

Another suggestion for preventing "sweating" is to apply the rubbing coats as carefully as possible—as carefully as finishing coats—and to rub lightly, using plenty of water.

By this plan the varnish is not rubbed too deeply and a good support is left for the finishing coat, which will show as a result a depth of lustre.

In this connection it must be pointed out that while "green" varnish is a frequent cause of "sweating," a "green" rubber is just as liable to furnish the answer. Rubbing too continuously or too hard in one spot heats up the varnish and will cause even a properly hardened rubbing coat to "sweat out."

NUMBER THREE

"Running," "Sagging," "Crawling," etc.

"Running" or "sagging" are terms applied to an uneven surface of varnish, produced by its flowing down. These two are generally due to unskillful handling of the varnish. "Crawling," allied to the above, may be caused by varnishing over an oily, glossy surface, or over a sweaty coat of varnish; this is not likely to be the fault of the finisher.

"Crawling" may also be caused by touching the work with perspiring hands, in which case it will occur more particularly

on the frames which are most handled; every job should for this reason be cleansed previous to finishing by rubbing with pulverized pumice or rotten-stone (the latter is preferable, being finer) which will remove the source of trouble. Varnish is also liable to crawl or draw when applied to work that is cold, or when applied in a room that is cold or damp.

In former times "crawling" was frequently caused by attempting to revarnish finishing varnishes while still tacky. Jobs on which the best finishing varnishes of the present day have been used can be safely refinished much sooner than formerly, as the modern finishings do not hold a tack as long as old type varnishes. After two or three days a light rub and thorough washing will usually put the job in safe condition for refinishing, except in the very worst of the "dog days."

Inexperienced workmanship is a frequent cause of puckers or crinkles in finishing varnishes, the painter not brushing the varnish equally all over, and consequently leaving more varnish in one place than another; and when this occurs the excess of varnish must crinkle up, for obvious reasons.

"Curtaining" indicates the running down or "sagging" of the varnish, particularly about mouldings, ornaments, etc., in forms resembling curtains or festoons; this trouble is sometimes spoken of as "festooning." The cause may in some instances be the use of varnish that is too new, and in many cases is from the varnish being unfinished and not perfected. However, "running" and "curtaining" are generally the faults of application. Sometimes in finishing panels, because of using a brush that is too soft and inelastic, the varnish is left thick in some places and thin in others,

and will overlap and run, particularly around corners and edges. The brush should be elastic to work the varnish well over the panels, and the coat should be laid as quickly as possible, to avoid setting or thickening of the varnish before it has been spread evenly. A slow-drying and durable varnish containing a large proportion of oil is more liable to run and streak than one which is harder-drying and heavier in body, and for this reason the highest grades of varnish require the most brushing up, or "dressing," as it is termed.

"Wrinkling" is caused by a too heavy flow of varnish; the outside surface absorbs oxygen, and drying, forms a skin over the larger mass of varnish; this in turn gives up a portion of its volatile oils, which lessens its bulk, and the outside skin, becoming larger than necessary to cover the under mass, draws up in ridges or wrinkles, somewhat resembling the wrinkling of the skin in old age.

"Going silky" or "enameling" (applied to a varnished surface presenting a fibrous or textile appearance as of silk or enameled leather) is another trouble that painters frequently meet with; but it is usually the case that this annoyance is found only where the varnish is used in a poorly heated room. In this case you can hardly give the varnish sufficient brushing to keep it in its place before it commences to "silk." The temperature of a varnish room should range between 70 and 80 degrees F., and should be kept as uniform as possible, not only while varnishing but during the processes of setting and drying.

Varnish is also liable to go "silky" when the undercoats are not well dried. The following case of "silking" clearly points out the effect and cause in one instance. The painter says:

“I have had varnish become ‘silky’ on one side of a body, while the other parts remained in good condition; and by following it up I found the cause to be a current of cold air passing between the body and the side of the room, from a crack between the base and the floor; and when this was caulked tight I never saw another case of ‘going silky’ or ‘enameling’ in that varnish room. This may not be the only cause, but it is well to know that it is one of the causes. It is therefore best to have bodies raised at least thirty inches from the floor to protect the varnish panels from draughts of cold air which are usually near the floor.”

The admixture of turpentine with varnish is also a common cause of “silking”; and brush-marks, the result of working the varnish too long, often leave an effect similar in appearance.

NUMBER FOUR

“Pin-Holing,” “Pitting,” “Blotching,” etc.

Definition—These three terms denote relative degrees or stages of the same general deviltry, and their appearance may be defined as follows:

Pin-Holing—This term is applied to the condition of a varnished panel showing a surface disfigured by innumerable small indentations resembling pin-holes.

Pitting — The same as pin-holing, but with the indentations more strongly marked.

Blotching, or Pock-Marking—Still more marked, presenting the appearance of very large scars, as of pock-marks on a person's face.

Causes—The following is a most comprehensive list of influences which are liable to induce this class of deviltries.

The defects known as pitting, pinholing, curdling, wrinkling, enameling, drawing up, and going stringy, are mainly due to the same general causes, namely:

(1) Change in the atmosphere from dry to damp; (2) Mixing two kinds of varnish of different grades or different makers; (3) Excessive heat or cold; (4) Varnishing over color or varnish which has not become sufficiently dry; or, (5) which is sweaty; (6) Varnishing with the floor very wet, or damp and cold from other causes; (7) Placing cold varnish on warm panels, or vice versa; and (8) another common cause, is the lack of proper ventilation and uniform temperature.

A sudden fall of temperature in summer will cause the pin-holing or pitting of varnish, especially if the air in the varnish-room is saturated with moisture. This is evaporated by the excessive heat of the varnish-room and is held in suspension by the air, and then let loose in the form of minute drops of rain upon the varnish while still wet; when the temperature falls rapidly, as it does at times during the summer months, these little drops being heavier than their own bulk of varnish sink, and the varnish retreats from them, causing the pits.

“Pin-holing” and “pitting” are often caused by oil being present in the brushes, owing to their not being carefully wiped out when taken from the keeper. Let us

note here that varnish-brushes ought not to be kept in oil, but in a high-grade brush-keeper varnish.

“Blotching” may be occasioned by mixing or thinning the varnish, or by the presence of turpentine in the varnish-brush; and if a painter kept his brush in a mixture of turpentine and oil, he might confidently expect to see his panels “blotched” when varnished.

Varnish, as a general rule, is delicate in its choice of company. A little turpentine, a little oil, or a little of anything, except its own kind, will make it liable to pit or crawl, or flake, or cut up some caper, and that dangerous little is frequently supplied by putting into the varnish-cup a brush fresh from a bath in a different liquid, as of oil.

A painter described one of his difficulties as follows:

“I once placed some bodies, just finished, with the back panels downward, and the body-loops resting on the floor which had been wet down for safety from dust. Next morning they were a pitiable sight; beginning near the centre of the body, which was about two feet from the floor, the pock-marks increased in depth and frequency to the part nearest the floor, where it was a complete blotch, while above the centre the varnish was not disturbed. The cause was plain: cold and dampness at the bottom, dryness and warmth above.”

And the same writer adds:

“A dry, warm atmosphere is the best safeguard against many of the ills that beset the varnish-room, pitting included, but that will not make poor varnish work perfectly.”

NUMBER FIVE

“Deadening,” or “Sinking-in.”

Definition — “Deadening,” “going-in,” “sinking-in,” “withering,” “grain showing,” “sadding down,” or “saddening,” “striking-in,” and “going sleepy” (the latter an English expression) these are a few of the many terms applied to one serious difficulty in the use of varnish, in which it loses its brilliant looking-glass surface, and becomes dull and lustreless.

It has been said that “at least thirty per cent of all the vehicle work done in the United States results in ‘sinking-in’.” This painter must have had pretty hard luck, we fear, in his individual experience. There can be no doubt, however, that the trouble is exceedingly common, and that it puzzles even the best painters to prevent it on all occasions.

Some painters have ascribed the cause of “deadening” or lack of lustre, to faulty varnish or improper mixing of varnish. These painters usually wind up with a cheerful note, claiming that lack of lustre is no indication of a loss of durability.

With these painters we cannot agree.

Faulty manufacture is very seldom the root of the trouble; more often our observation has convinced us that the painter is the factor at fault.

“Deadening” is commonly caused by unseasoned lumber, composition panels of an absorbent nature, or because of imperfectly dried paint or varnish undercoats.

This last is a very prevalent difficulty since it is most apt to occur as a result of hurried work, more especially in the paint shop, because if the undercoats are not

thoroughly hard before the finishing coat takes its position, then when the first coats do sink, as they must in order to harden, the finishing must follow, and you look in vain for lustre.

It is for this reason that *each* coat of material must be thoroughly hard before the *next* coat is applied.

Lead coats used as priming often never become thoroughly hard, especially when used on metal bodies. They are a relic of wooden built coach days when several months were allowed to paint and finish a job, and have no rightful place in a modern system.

Another very common cause of the above difficulties is the absorption of the varnish by dead and porous undercoats of paint or priming.

The use of waxes and polishes will also sometimes cause the finishing varnish to dry without lustre even though the undercoats appear O. K.

A complaint of "sinking-in" recently investigated developed the information that the painter, who was apparently allowed to run footloose as to systems, was applying a coat of sealer, two coats of flat color, and a coat of color varnish all the same day—of course the lustre of the finishing coat "died away."

In another case "deadening" followed by premature "checking" was found to be caused by the painter using Celox Sealer, an extremely elastic liquid as a binder (in liberal doses) for our Japan Color (it states on every Japan Color can that no binder is required). Of course, this coat was still soft when the subsequent coats were applied.

NUMBER SIX

**“Chipping,” “Flaking” and
“Scaling” or “Peeling”**

Definitions—These terms all indicate the partial separation, more or less marked, of one varnish coat from another, or of the varnish from a coat of paint or other ground. They are often used to express a difference in degree; thus, when the varnish flies off in small particles, it is spoken of as “chipping”; if in larger pieces, that is “flaking”; while “scaling” and “peeling” are applied to still worse cases of the same sort.

Causes—The most common cause of “chipping” and similar troubles is to be found in the lack of uniformity between the various coats as regards elasticity—the application of an inelastic coat over an elastic coat.

In discussing the “chipping” type of trouble it must be first borne in mind that the properly planned paint and varnish structure calls for increasingly elastic coats as the job progresses from surfacer to finishing varnish.

It takes an experienced and careful painter to judge correctly as to what is required in this respect but it is a certainty that any painter can produce “chipping” or “flaking” or any similar disturbance to order by simply disregarding the rule above outlined.

(Perhaps the most obvious procedure for the doubtful painter is to consult with the manufacturer who is equipped to render

technical service along this line and who can suggest a complete system of finishing, from the wood or metal up.—Ed.)

One of the frequently-met difficulties of this type is the “flaking” of varnish coats from the Japan Color coat which contains too much binder of an elastic nature.

The color in such cases presents a glossy or semi-glossy surface, on which the varnish will first “crawl” and then “chip” or “flake.”

If a greasy surface is not thoroughly cleaned and all trace of grease removed, a color coat applied over this will inevitably “peel” or “chip” it.

Potash and other paint removing agents leave a certain amount of alkali on the surface. If this alkali is not thoroughly removed by careful cleansing, “chipping” or “peeling” is almost certain to occur.

Paint and Varnish “remover” always contain wax or parafin in some form, and unless the remover itself is very carefully washed off (a mixture of benzole and denatured alcohol is best) a greasy surface is left which will eventually cause “flaking” and “peeling” of the finished job.

In the above lines, we have covered primary causes and given some idea as to preventive measures.

When the trouble has occurred, the cure is to sandpaper or pumice down all coats that are affected and then rebuild the job from that point on.

The baked or enameled hood and fender furnish another source of the “peeling” type of difficulty.

The new hood or fender is apt to be greasy, as a result of the baking or enameling process and this greasy surface must be thoroughly cleaned if trouble is to be avoided.

Then, too, the baked surface is extremely hard, a glossy surface which offers little "hold" for the varnish coat which is to be applied.

The new hood or fender should be rubbed down with pumice and water, or sandpaper, then thoroughly washed with hot water.

Follow this with a wash with benzole and then with clear warm water and the surface is ready for the varnish coats.

In the case of the baked hood or fender which is not new but which has had road use, these should be rubbed down as described, cleaned and then primed with a good first coating such as our Celox Primer.

Unless hood and fender refinishing is very carefully handled, this type of work is apt to result in "peeling", "chipping" and other similar difficulties.

The baked or enameled surface presented on hoods and fenders is always greasy—caused by the process itself—and all of this greasy surface must be thoroughly cleaned before any refinishing is attempted.

A good cleansing system would be—

Sandpaper

Wash with hot water

Wash with benzole

Wash with clear water.

NUMBER SEVEN

“Cracking”

Definition—The cracking or breaking up of the surface into parts more or less minute, as in the case of a looking-glass when fractured, is one of the most common difficulties attending the use of varnish.

Causes—The causes, which are several and well understood by experienced varnishers, may be enumerated briefly as follows:

1. By an inelastic surface underneath, either of varnish or color. Extremely elastic undercoats add very little, if any, durability to a job. The main point is to have each coat more elastic than the preceding one.

2. By a glossy or too elastic ground. The drying of glossy color is often so very slow that it does not crack the subsequent coats till the work has been varnished and run out.

There are numerous cases of this kind of color-cracking, which must not be confounded however with varnish-cracking, for the destruction of this color is the cause of the varnish being destroyed prematurely. It will be understood from this fact that varnish has more to contend with than color, for it covers the latter and being transparent many of the misadventures of the color are seen through the varnish and attributed to it.

3. By previous coats of color or varnish that were not dry when subsequent coats were applied.

4. By destruction of the oily properties of the varnish through exposure to atmospheric influences, such as sudden change from heat to cold, or undue exposure to the sun.

5. By the action of ammonia or other alkalies.

6. By springing, causing rupture of the whole paint structure.

Sometimes the expression "fire checks" is used. These are species of cracks, very small and running in every direction forming squares, triangles, and circles, which are sometimes to be seen all over a panel, but which are not generally visible until a fine lustre is secured with the finishing coat. In reference to "fire checks", we quote from an authority as follows:

"I proved to my satisfaction not long ago that these (fire checks) may be caused by a coat put over a surface not hardened; for in this instance, parts of the job which did not receive that hurried coat turned out splendidly."

Varnish cracks can seldom be filled so that they will not show themselves again in a very short time. The only effectual way to remove them is to rub them out and rebuild the paint structure from the wood or metal up.

NUMBER EIGHT

Going "Cloudy," "Smoky," or "Foggy"

Definition—These terms, all synonymous, are self-explanatory as to their appearance, and are equivalent to the expression "blooming", which still more aptly describes the condition of a varnished surface where the brilliancy of the varnish is obscured by a cloudy or hazy appearance.

Causes—This varnish difficulty is due almost invariably to atmospheric conditions, moisture being the chief cause of the trouble.

Foggy, misty weather, resulting in a moisture-laden atmosphere will present this problem of “blooming,” unless the painter is careful and watches the work constantly, both during and after varnishing.

Lack of ventilation in the varnish room is an invitation for moisture to collect, and especially is this so in newly erected paint shops. This moisture is not allowed to escape and must therefore settle on the job, a bad case of “blooming” being almost inevitable.

Some painters argue strenuously against the somewhat common practice of “wetting-down” the floors of varnish rooms. These painters claim that the wetting practice in a shop is evidence that the finishing room was not properly cleaned before the work was brought in and these painters urge, as a better plan, that the floor be thoroughly varnished so that it can be wiped free from dust with a damp mop.

The surface which has “bloomed” can be brought back to its original brilliancy if the varnish is carefully washed with clear, clean water and then “shammied” dry, and if possible run out of doors into direct sunlight.

This must be done promptly however, for if the “bloomed” varnish surface is allowed to stand untouched the “bloom” is not removable and the job will have to be done over.

NUMBER NINE

“Turning Yellowish or Green”

The exclusion of light or the presence of certain impurities in the air, such as gas from a coal fire, has the effect of discoloring and darkening varnish, generally increasing its “yellowish” tone.

This has an immediate effect upon the color beneath, giving a “yellowish” cast to the entire job and turning deep blues and blacks to a decided “greenish” hue. This is so pronounced in some cases that a car brought up in a light blue gray, if finished with an ordinary varnish and left in the dark for a few weeks, will quite often be found to have turned a distinct “green” gray, the varnish having turned to an amber “yellow” acting as a glaze over the original color.

It is impossible to produce a high-grade finishing varnish that will not show some of this tendency to darken and turn “yellow” when the job is stored in a dark place for a long period of time. But the Valentine Finishing Varnishes not only resist rapid yellowing in the dark to a marked degree, but they are so much paler to begin with that by the time they have reached their ultimate depth of tone in the dark, they are very often no darker than many of our competitors’ look when freshly applied.

It may readily be seen from the foregoing that the simplest way to guard against the undue “yellowing” of any job is first of all to see that it is finished with the palest and best (Valentine’s); and secondly, where the car is to be stored for any appreciable time see that it is put, if possible, in a well-lighted room or taken out from time to time and exposed to the direct rays of the sun.

If it has been found necessary to store a job for a year or more in a dark warehouse, even the Valentine & Company finishing will turn "yellow" and in that case the job should be rubbed down to the color coat and refinished.

NUMBER TEN

"Mud Spotting"

Mud spotting or water spotting is liable to occur on the long oil highly elastic varnishes used in automobile and carriage finishing if while the finish is new, spots of mud, drops of muddy or dirty water, or drops of soapy water are allowed to dry on the surface. This is especially true in large cities where the rain and mud are liable to contain more or less ammonia—and in country localities where the soil is of an alkaline nature. Mud should never be allowed to dry on the finish even after the finish has become thoroughly hard. As long as the mud remains moist there is little danger of its leaving spots, but if allowed to remain on the varnish overnight or long enough to dry it will almost invariably leave stains. Except in the case of freshly dried varnish or in the case of districts where the mud is full of alkali, these spots may be removed by frequent washings with clear cold water and, if possible, exposure to direct sunlight.

Cars carelessly washed in garages where soap is used are often badly spotted by having spots of soapy water left on the finish to dry—this, of course, has the same effect as mud of an alkaline nature.

A newly finished car which has been out in the rain—especially a car used in the city where the air is charged with ammonia and fumes from various factories and chemical works, should be rinsed off with clear water on returning to the garage and carefully dry-shammied.

NUMBER ELEVEN

“Blistering”

Definition—The swelling out of the parts of the varnish surface, after it is dry and hard, into bubbles or blisters.

This, we are prepared to assert, is never caused by any fault on the part of the varnish, but it seems to be the common opinion of the painters whose reports are before us, that blistering is in all instances produced by one and the same cause—namely, the presence of oil, moisture, or grease on the work over which the paint or varnish was applied.

Exposure to sunshine or heat is usually necessary as a subsequent agency, which acts upon the oil, moisture or grease, and causes it to expand and lift the covering of the varnish above it. Again, dampness or sap in the wood, if exposed to heat, will be liable to produce the same effect for similar reasons. Water is frequently absorbed by the roughstuff during rubbing, and if not allowed to evaporate before applying another coat, is liable to cause blistering. Freshly varnished work ought always to be protected as much as possible from direct sunlight or strong heat. Instances are on record where the surfaces of coaches, pianos and furniture have been blistered by the action of a bubble in a window pane which concentrated the sun's rays upon the varnish in the same manner as a burning-glass would.

Roughstuff or surfacer when applied too rapidly, one on the other, will sometimes imprison some of the initial thinner of the first coats, which will subsequently show up in the form of blisters when the job is run out in the hot sun. Shellac is a very specific cause of blistering, especially when used as a first coater under a “bright wood

finish.” The alcohol in which the shellac is cut always contains from 5 to 10 per cent. of water, and more moisture is often precipitated on and in the shellac coat, immediately after its application, by the cooling effect of the rapidly evaporating alcohol. Shellac sets so quickly that much of this moisture is imprisoned in the shellac coat. When this coat is finished over with impervious coats of paint or varnish, or both, this imprisoned moisture will vaporize and cause blisters—sometimes completely covering the surface when the finish is exposed to heat.

The only way to avoid “blistering” is to avoid its causes by following the lines suggested in the above “reasons why.”

NUMBER TWELVE

Crumbling, Rusting or Premature Perishing

Definition—These synonymous terms are applied to certain conditions of varnish where there is a gradual loss of brilliancy and life—resulting in complete destruction of the varnished surface.

Causes—There are a number of different agents which cause a varnished surface to perish prematurely. Among these are ammonia, alkali—in the form of mud, damp sea air, and automobile polishes and soaps.

1. The mud in city streets contains ammonia from manure, which is very hard on varnish. Formerly, before the advent of the automobile, carriages were subjected to strong ammonia fumes from manure about the stables.

2. In certain sections of the country the soil is strongly alkaline. The alkali dust is

harmful to varnish, and alkali mud even more so, for if the mud dries hard it will leave spots on the varnish when washed off. Valentine & Company manufacture varnishes which are specially prepared to meet these adverse conditions.

3. Damp sea air is hard on varnish. This is due mostly to continued exposure to dampness, rather than to the effect of the salt in the air.

4. Probably the greatest cause of premature perishing of varnish is the use of so-called polishes and renovators and automobile soaps.

Most polishes do not remove dust and grime, but in their application grind them into the finish. Their use also tends to keep the finishing varnish in a softened condition, when it is easily injured.

Automobile soap should never be allowed to come in contact with the finish of a car body. Its action is caustic and will soon dim the lustre and affect the life of the varnish. If soap must be used, put it in solution and apply with a soft sponge, and then to wheels and under parts only.

